UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,495	10/24/2003	Abhijeet Gole	5693P029	1876

48102	7590	04/05/2006

NETWORK APPLIANCE/BLAKELY
12400 WILSHIRE BLVD
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EXAMINER
VO, THANH DUC

ART UNIT	PAPER NUMBER
2189	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/692,495	GOLE ET AL.
	Examiner	Art Unit	
	Thanh D. Vo	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _09 March 2006_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1,3,4,6-10,12 and 14-20_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1,3,4,6-10,12 and 14-20_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _17 January 2006_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a) ☐ All   b) ☐ Some *   c) ☐ None of:

   1. ☐ Certified copies of the priority documents have been received.

   2. ☐ Certified copies of the priority documents have been received in Application No. _____.

   3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _03/09/2006_.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office Action is responsive to the Amendment filed on January 17, 2006.

Claims 1, 3, 4, 6, 7, 10, 12, 14, and 17-20 have been amended. Claims 2, 5, 11, and 13

have been canceled. Claims 1, 3, 4, 6, 7, 10, 12, 14, and 17-20 are presented for

examination. Claims 1, 3, 4, 6, 7, 10, 12, 14, and 17-20 pending.

Information Disclosure Statement

2.   The information disclosure statement (IDS) submitted on March 9, 2006 was filed

after the mailing date of the Application on October 24, 2003. The submission is in

compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure

statement is being considered by the examiner.

Response to Amendment

3.   Applicant's arguments with respect to claims 1-10 have been considered but are

moot in view of the new ground(s) of rejection necessitated by Applicant's amendment.

Rejections are maintained as follow.

At the time of the Applicant's amendment, when combining the allowable subject

matter to the independent claim, Applicant has shifted the scope of the invention by

omitting the previously presented limitation and further changing the essential element

of claims 2 and 5 that are depending from claim 1. The omitted elements are:

(a) a nonvolatile mass storage device (in claim 2)

(b) transferring the access request to the data container on a nonvolatile mass

storage device coupled to the second storage server **when the memory is full** (in claim

2)

(c) **when the memory is full**, writing the first portion of the memory to the data

container (in claim 5)

With respect to (a), it has been omitted in independent claim 1 at the time of the

Amendment.

With respect to (b) and (c), the language is now changed to, "when the **first**

portion of the memory is full, writing the **first portion** of the memory to a data

container".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed
publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4.   Claims 10-16 are rejected under 35 U.S.C. 102(a) as being unpatentable by

Yanai et al (US Patent 6,502,205).

As per claim 10 (Currently amended), Yanai et al. discloses an apparatus

comprising:

a destination storage server to mirror data stored by a source storage server (col.

7, lines 40-46);

a network interface on the destination storage server coupled to the source

storage server (col. 8, lines 30-34), the network interface to receive a data access

request from a client coupled to the source storage server (col. 7, lines 50-54), wherein

the destination storage server is configured to write the data access request to a data

container corresponding to the source storage server (Fig. 12, col. 32, lines 49-57); and

a memory (Fig. 12, item 296) on the destination storage server to receive the

access request (col. 10, lines 52-54), the memory partitioned into a first portion (Fig. 12,

item 293) and a second portion (Fig. 12, item 294), the first portion corresponding to the

source storage server (Fig. 12, item 214 and col. 32, lines 49-57; wherein R1 and R2

are corresponding with each other), wherein the data container is written to the first

portion (col. 32, lines 55-56) and the data container is written to a nonvolatile mass

storage device coupled to the destination storage server (col. 10, lines 50-58); *wherein*

the data container has to be in the data mirroring and storage system since a data has

to be held in an addressable format such as a file.

As per claim 12 (Currently amended), Yanai et al. discloses an apparatus,

wherein the network comprises a Transmission Control Protocol/Internet Protocol

(TCP/IP) network. See col. 13, lines 7-13, wherein TCP/IP is an inherent feature of the

ESCON system.

As per claim 14 (Currently amended), Yanai et al. discloses an paratus, wherein

the memory comprises a nonvolatile random access memory (NVRAM). See col. 18,

lines 5-9; *wherein random access memory is backed-up by a battery power which makes the RAM becomes a nonvolatile random access memory.*

As per claim 15 (Original), Yanai et al. discloses an apparatus, wherein the destination storage server modifies an image of a volume maintained by the source storage server on a second nonvolatile mass storage device (secondary volumes) coupled to the destination storage server according to the access request (col. 10, lines 50-58) when the source storage server makes a synchronization request (col. 10, lines 19-23).

As per claim 16 (Original), Yanai et al. discloses an apparatus, wherein the data container is a file. See Fig. 12, item 294 wherein R2 comprises of data file.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-9 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yanai et al. (US Patent 6,502,205) in view of Court et al. (US Patent 5,636,360)

As per claim 1 (Currently amended), Yanai et al. discloses a method for mirroring data comprising:

partitioning a memory (Fig. 12, item 296) of a second storage server (Fig. 12,

item 246) into a first portion (Fig. 12, item 293) and a second portion (Fig. 12, item 294),

the first portion 293 corresponding to a first storage server (Fig. 12, item 214 and col.

32, lines 49-57; wherein R1 and R2 are corresponding with each other);

receiving at the second storage server a data access request from the first

storage server (col. 2, lines 54-59);

writing the data access request to the first portion of the memory (col. 32, lines

55-56);

writing the first portion 293 of the memory to a data container 294 corresponding

to the first storage server on the second storage server. See col. 53-57.

Yanai et al. failed to teach "when the first portion of the memory is full, writing the

first portion of the memory to a data container".

Courts et al. teaches a method of copying the contents of a log buffer to a log

partition when the log buffer is full (col. 2, lines 35-37). It would have been obvious to

one having an ordinary skill in the art at the time of the Applicant's invention to

recognize that it is advantageous to combine the method of Courts et al. with the

method of Yanai et al. to arrive at the invention claims in claim 1 since combining the

two methods will speed up disk file system while ensuring the consistency and integrity

of the file system as taught by Court et al. on col. 2, lines 41-45.

As per claim 3 (Currently amended), Yanai et al. discloses a method further

comprising:

receiving a synchronization request at the second storage server from the first

storage server (col. 10, lines 19-23); and

updating an image of a volume maintained by the first storage server on a

second nonvolatile mass storage device coupled to the second storage server using the

data access request. See col. 10, lines 50-58.

As per claim 4 (Currently amended), Yanai et al. discloses a method further

comprising:

sending an acknowledgement from the second storage server to the first storage

server in response to receiving the data access request (col. 10, lines 19-24) to cause

the first storage server to send a response to a client (col. 32, lines 26-27) after the data

access request has been stored on the first storage server and stored in the data

container 294 (col. 32, lines 49-57) , wherein the client has previously sent the data

access request to the first storage server (col. 2, lines 60-67).

As per claim 6 (Currently amended), Yanai et al. discloses a method further

comprising:

writing the data access request to a second memory (Fig. 12, item 292) on the

first storage server 214 upon receiving the data access request (col. 32, lines 62-63);

and

updating the first storage server using the data access request in response to a

synchronization request (col. 10, lines 18-23).

As per claim 7 (Currently amended), Yanai et al. discloses a method, wherein the data access request is transmitted from the first storage server to a second storage server over a network (Fig. 12, items 240-241 and col. 12, lines 40-42).

As per claim 8 (Currently amended), Yanai et al. discloses a method further comprising:

assigning a sequence number to the data access request, wherein the sequence number designates a position of the data access request in a group of data access requests to ensure that the data access request is properly ordered within the data container. See col. 18, lines 45-54.

As per claim 9 (Original), Yanai et al. discloses a method, wherein the data container 294 must contain a file. See Fig. 12, item 294.

6.   Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yanai et al. (US Patent 6,502,205) in view of McMillan Jr. (hereinafter McMillan) (US Patent 5,587,390).

As per claim 17 (Currently amended) Yanai et al. discloses a method comprising:

receiving a data access request at a destination filer from source filer (col. 2, lines 54-59), wherein the data access request is written to a first memory coupled to the source filer (col. 32, lines 55-56);

sending an acknowledgement to the source filer in response to the destination filer receiving the data access request (col. 10, lines 19-24);

writing the data access request to a second memory (Fig. 12, item 293) coupled to the destination filer (col. 32, lines 49-57);

transferring the data access request from the second memory 293 to a file corresponding to a source filer on a volume coupled to the destination filer (col. 32, lines 37-38; lines 49-53);

Yanai et al. did not explicitly disclose a method of removing the data access request from the second memory after transferring the data access request to the file. However, McMillan disclosed a method of removing a request when an acknowledgement is transferred from one location to another (col. 5, lines 35-39). At the time of the Applicant's invention it would have been obvious to one having an ordinary skill in the art to recognize that it is advantageous to remove/delete the access request once the transaction is completed or the data has been transferred. The motivation of doing so is to prevent unnecessary data from transferring to the file again and maintaining an appropriate operation of the system while increasing data throughput.

As per claim 18 (Currently amended) Yanai et al. discloses a method further comprising:

receiving a second data access request from a second source filer (col. 2, lines 54-59), wherein the second data access request is written to a third memory coupled to the second source filer (col. 32, lines 55-56);

sending a second acknowledgement to the second source filer in response to the

destination filer receiving the second data access request (col. 10, lines 19-24);

writing the second data access request to the second memory (Fig. 12, item 293,

col. 32, lines 49-57);

transferring the second data access request to a second file corresponding to the

second source filer on the volume coupled to the destination filer (col. 32, lines 37-38;

lines 49-53);

Yanai et al. did not explicitly disclose a method of removing the data access

request from the second memory after transferring the data access request to the

volume. However, McMillan disclosed a method of removing a request when an

acknowledgement is transferred from one location to another (col. 5, lines 35-39). At

the time of the Applicant's invention it would have been obvious to one having an

ordinary skill in the art to recognize that it is advantageous to remove/delete the access

request once the transaction is completed or the data has been transferred. The

motivation of doing so is to prevent unnecessary data from transferring to the volume

again and maintaining an appropriate operation of the system while increasing data

throughput.

As per claim 19 (Currently amended), Yanai et al. disclosed a method

comprising:

connecting the second source filer to the client in response to a system failure.

See col. 26, lines 53-55.

Although Yanai et al. did not specifically mentioned that the client can access the second source filer; however, it would have been obvious to one having an ordinary skill in the art at the time of applicant's invention to recognize that the client (host) is having the primary motivation to access the backup data from the second filer. Therefore, it would have been obvious that the client (host) is connected to the second filer (secondary controller) in response to a system failure in order to access the mirrored data in the secondary filer.

As per claim 20 (Currently amended), Yanai et al. disclosed a method comprising:

applying the access request to an image of a volume maintained by the source filer 12 and allowing the client 12 to access the image. See col. 17, lines 25-40.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

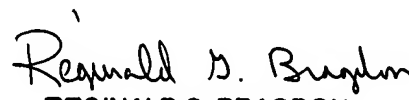than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Thanh D. Vo whose telephone number is (571) 272-

0708. The examiner can normally be reached on M-F 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Reginald G. Bragdon can be reached on (571) 272-4204. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Thanh Vo
Patent Examiner
Art Unit: 2189
04/03/2006

REGINALD G. BRAGDON
PRIMARY EXAMINER